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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/869,724	06/29/2001	Hajime Izawa	SUMI-005	8532

7590

01/28/2004

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EXAMINER
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YOON, TAE H

ART UNIT	PAPER NUMBER
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1714

DATE MAILED: 01/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 09/869,724	<b>Applicant(s)</b> IZAWA ET AL.	
	<b>Examiner</b> Tae H Yoon	<b>Art Unit</b> 1714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 January 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 8-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 8-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All    b) ☐ Some \*    c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_                      6) ☐ Other: \_\_\_\_\_

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The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 8-19 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The specification and claims recites a conductive oxide powder being a hydrophilic powder, however, no properties with respect to said hydrophilic powder and none of the conductive oxide powder being also a hydrophilic powder are disclosed. Applicant failed to describe said hydrophilic powder adequately in the specification since the scope of said conductive oxide powder being also a hydrophilic powder is not defined.

The recited "than any other solvent" in lines 5 and 8 of claim 18 constitutes NEW MATTER since it does not have support in the originally filed specification. The top of page 4 teaches "than the other solvent(s)".

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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Claims 8-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The recited "thin" in "thin film" is indefinite since the specification and claim do not teach any thickness of a film and since the recited properties such as light permeability and haze value are dependent on the thickness of a film. Also, the recited properties, light permeability and haze value of claim 12 is indefinite absent the thickness of a film. The recited "thin film" is a subjective term and thus the metes and bounds of the subject matter is unclear. The pages of specification pointed out by applicant do not show any thickness of a film. The recited hydrophilic powder as a conductive oxide powder is indefinite since the nature of said hydrophilic powder is neither taught nor defined. Is it water-soluble or water-dispersible or hydrophilic compound coated or treated or hydrolyzable, for example?

The recited preamble "The transparent conductive thin film" of claims 11 and 12 lacks antecedent bases in claim 8 wherein a paint is claimed, and said transparent conductive thin film is an intended use.

The recited primary and secondary granules in claim 13 are confusing absent further limitation since particle sizes (20-100 nm range) are overlapped.

With respect to "at least two types" in line 3 of claim 18, it is unclear what additional species are allowed into the genus of the terminology modified by "type". The word "type" therefore makes the modified terminology indefinite. See Ex parte Copenhaver, POBA, 1955, 109 USPQ 118-119.

The recited "ration" in line 8 of claim 18 should be "ratio".

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Again, the examiner's position is that even a small amount, such as 0.01 wt.%, of a conductive oxide powder having a diameter of no greater than 100 nm would meets the instant invention absent a particular amount thereof. Also, the prior art teaching an average particle size of 30 nm, for example, would encompasses particles having a size of 10 nm and 40 nm, for example, inherently since said average particle size includes various sizes, smaller and larger.

Claims 11 and 12 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Yukinobu et al (US 5,411,792).

Rejection is maintained for reason of record and following response.

The thin film no longer contains solvents, and thus the invention lacks novelty.

Claims 8-13, 18 and 19 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Yukinobu et al (US 6,261,479).

Rejection is maintained for reason of record and following response.

Claims recite just a conductive oxide powder, not a hydrophilic or non-hydrophilic powder, and thus applicant's assertion regarding said hydrophilic or non-hydrophilic powder in combination with solvents has no probative value. Applicant asserts that ethanol is classified as an easily dispersible low-boiling point solvent of the hydrophilic conductive oxide powder and diacetone alcohol is classified as an easily dispersible high-boiling point solvent of the non-hydrophilic conductive oxide powder, but said diacetone alcohol would be a difficultly dispersible high-boiling point solvent of the hydrophilic conductive oxide powder and applicant failed to show otherwise. Applicant further asserts that Yukinobu et al do not teach the instant weight ratio said solvents, but the solvent mixture of 11.8% water (bp = 100 °C), 82.9% ethanol (bp = 78 °C) and 5.0% diacetone alcohol (bp = 166 °C)  $[(11.8+82.9): 5.0 = 94.7: 5.0]$  meets the instant ratio contrary to applicant's assertion.

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Claims 8, 9, 11-13, 15 and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al (US 5,204,177).

Sato et al teach the instant transparent conductive coating composition and a film thereof in example 15 (1:1 mixture of MEK/toluene), col. 9, lines 59-61 and table 2 except the instant ratio of solvents as pointed out by applicant. However, Sato et al teach the use of various mixtures of solvents at col. 6, lines 10-33. Average particle diameters, such as 0.10 or 0.07  $\mu\text{m}$  (100 or 70 nm) shown in table 1 encompass the instant primary and secondary granules absent amounts thereof. Also, see In re Mills, 477 F2d 649, 176 USPQ 196 (CCPA 1972); Reference must be considered for all that it discloses and must not be limited to its preferred embodiments or working examples.

It would have been obvious to one skilled in the art at the time of invention to change the ratio of solvent mixtures in Sato et al since Sato et al teach the use of various mixtures of solvents and since adjusting the ratio of solvent mixtures in order to obtain easily workable coating composition would be a routine practice in the art absent showing otherwise.

Claims 11 and 12 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Murouchi et al (US 5,504,133).

Rejection is maintained for reason of record since the thin film no longer contains solvents.

Claims 8, 9, 11-13, 15, 17 and 18 are rejected under 35 U.S.C. 103(a) as obvious over Murouchi et al (US 5,504,133).

Applicant asserts that Murouchi et al teach butanol-xylene solvent (4:6) in example 1 and thus failed to meet the instant features of (1) and (2), but the examiner disagrees since the recited "easily dispersible low-boiling point solvent" and "difficulty dispersible high-boiling point solvent" have little probative value absent particular boiling points. Said butanol (bp=118 °C) and xylene (bp=142 °C) meet said relationship of boiling points since the recited "easily dispersible low-boiling point solvent" and "difficulty dispersible high-boiling point solvent" are relative terms, not absolute terms.

Also, Murouchi et al teach the ratio of the polar to non-polar being 2:8 to 6:4 at col. 3, lines 30-42 (wherein ketone solvents are taught which encompass ketones of the instant claim 15), and thus it would have been obvious to one skilled in the art at the time of invention to change the ratio of solvent mixtures in examples of Murouchi et al absent showing otherwise.

Claims 8-13, 15, 17, 18 and 19 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Nishihara et al (US 5,518,810).

Rejection is maintained for reason of record and following response.

THF (bp=65 °C) and DMF (bp=153 °C) meet the instant relationship of boiling points since the recited "easily dispersible low-boiling point solvent" and "difficulty dispersible high-boiling point solvent" are relative terms, not absolute terms. Also, the



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weight ratio of 12:5 (about 7:3 based on 100%) meets the instant ratio contrary to applicant's assertion.

Claims 11 and 12 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Tamai et al (US 2002/0051879).

Rejection is maintained for reason of record since the thin film no longer contains solvents.

Claims 8-13, 15, 17, 18 and 19 are rejected under 35 U.S.C. 103(a) as obvious over Tamai et al (US 2002/0051879).

MEK (bp=80 °C), toluene (bp=111 °C) and cyclohexanone (bp=155 °C) meet the instant relationship of boiling points since the recited "easily dispersible low-boiling point solvent" and "difficulty dispersible high-boiling point solvent" are relative terms, not absolute terms.

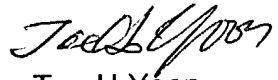
Applicant asserts that the ratio of 1:2 taught by Tamai et al is out of the scope of the feature (2). However, Tamai et al teach any mixtures of solvents in [0050-0052], and thus it would have been obvious to one skilled in the art at the time of invention to change the ratio of solvent mixtures in examples of Tamai et al absent showing otherwise.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tae H Yoon whose telephone number is (571) 272-1128. The examiner can normally be reached on Mon-Thu.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

  
Tae H Yoon  
Primary Examiner  
Art Unit 1714

THY/January 21, 2004